CLAIMS

1.   A method for processing a digital image, wherein said digital image comprises at least a gray-scale component, comprising:

morphologically filtering said grayscale component to produce a segmentation result;

low-pass filtering said gray-scale component under control of at least said segmentation result to produce an image mask; and

enhancing tone reproduction of said digital image utilizing at least said image mask.

2.   The method of claim 1 further comprising:

quantizing said grayscale component before morphologically filtering said grayscale component.

3.   The method of claim 1 further comprising:

decomposing said grayscale component into a plurality of binary images.

4.   The method of claim 3 wherein said morphologically filtering said grayscale component comprises morphologically filtering each of plurality of binary images.

5.   The method of claim 1 wherein said low-pass filtering operates on an area of pixels defined by a filter kernel.

6.   The method of claim 5 wherein said low-pass filtering is operable to calculate a first average value over a peer group, wherein said peer group is each pixel within said filter kernel that possess a same segmentation value as a selected pixel.

7.   The method of claim 6 wherein said low-pass filtering is operable to calculate a second average value over a non-peer group, wherein said non-peer group is each pixel within said filter kernel that does not possess the same segmentation value as the selected pixel.

8.   The method of claim 7 wherein said image mask is a matrix of values with each value being a function of at least said first average value and said second average value.

9.   The method of claim 1 wherein said enhancing tone reproduction comprising:

applying a seed value that is operable to affect a global modification of tone reproduction.

10.   The method of claim 1 wherein said seed value is selected by a region of interest algorithm.

11.   A computer-readable medium comprising executable instructions for processing a digital image, wherein said digital image comprises at least a gray-scale component, comprising:

code for applying open and close morphological filters to said gray-scale component to produce a segmentation result;

code for low-pass filtering said gray-scale component to produce an image mask, wherein said code for low-pass filtering is operable to apply said low-pass filter under control of at least said segmentation result; and

code for enhancing said gray-scale component by utilizing at least said image mask.

12.   The computer readable-medium of claim 11 wherein said code for enhancing said gray-scale component further utilizes a seed value that is controllable by a user.

13.   The computer-readable medium of claim 11 further comprising:

code for decomposing said gray-scale component into a plurality of binary images that is operable before said code for applying.

14.   The computer-readable medium of claim 11 further comprising:

code for quantizing said gray-scale component that is operable before said code for applying.

15.   The computer-readable medium of claim 11 wherein said code for low-pass filtering determines a peer group and a non-peer group for each pixel, wherein said peer group is defined by the pixels within a filter kernel that possess a same segmentation value as the respective pixel and said non-peer group is defined by the other pixels with said filter kernel.

16.   The computer-readable medium of claim 15 wherein said code for filtering calculates a first average value over said peer group and a second average value of said non-peer group.

17.   The computer-readable medium of claim 16 wherein said image mask is a matrix of values with each value being a function of a respective first average value and a respective second average value.

18.   A system for processing a digital image, wherein said digital image comprises at least a gray-scale component, comprising:

means for morphologically filtering said gray-scale component to produce a segmentation data structure;

means for low-pass filtering said gray-scale component to produce an image mask, wherein said means for low-pass filtering operates under control of at least said segmentation data structure; and

means for enhancing tone reproduction of gray-scale component utilizing at least said image mask.

19.   The system of claim 18 wherein said means for enhancing further utilizes a seed value to enhance tone reproduction of said gray-scale component.

20.   The system of claim 18 wherein said means for low-pass filtering is operable to calculate a first average value for a peer group of a pixel and a second average value of a non-peer group of said pixel.

21.   The system of claim 20 wherein said means for low-pass filtering is operable to filter said pixel based on a function of at least said first average value and said second average value.

22.   The system of claim 21 further comprising:

means for decomposing said gray-scale component into a plurality of binary images before said means for morphologically filtering is operable.